

#15

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RAW SEQUENCE LISTING

DATE: 05/01/2003

PATENT APPLICATION: US/09/866,570B

TIME: 13:29:48

Input Set : A:\EP.txt

Output Set: N:\CRF4\05012003\I866570B.raw

3 <110> APPLICANT: Washington State University Research Foundation

4 Croteau, Rodney B

5 Walker, Kevin D

6 Schoendorf, Anne

7 Wildung, Mark R

9 <120> TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING 10-DEACETYLBACCATIN III O

ACETYL

10 TRANSFERASE AND RELATED PRODUCTS

12 <130> FILE REFERENCE: 4630-59094

14 <140> CURRENT APPLICATION NUMBER: US 09/866,570B

15 <141> CURRENT FILING DATE: 2001-05-25

17 <150> PRIOR APPLICATION NUMBER: US 09/457,046

18 <151> PRIOR FILING DATE: 1999-12-07

20 <150> PRIOR APPLICATION NUMBER: US 09/411,145

21 <151> PRIOR FILING DATE: 1999-09-30

23 <160> NUMBER OF SEQ ID NOS: 74

25 <170> SOFTWARE: PatentIn version 3.1

27 <210> SEQ ID NO: 1

28 <211> LENGTH: 920

29 <212> TYPE: DNA

30 <213> ORGANISM: Taxus cuspidata

32 <400> SEQUENCE: 1

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 35 gaagtggaaat gcacagggga ggggtgctatg tttttggaag ccatggcaga caatgagctg 120
 37 tctgtgttgg gagattttga tgacagcaat ccatcatttc agcagctact tttttcgctt 180
 39 ccactcgata ccaatttcaa agacctctct cttctggttg ttcaggtaac tcgttttaca 240
 41 tgtggaggct ttgttggttg agtgagtttc caccatgggt tatgtgatgg tcgaggagcg 300
 43 gcccaatttc ttaaagggtt ggcagaaatg gcacggggag aggttaagct ctcattggaa 360
 45 ccaatatgga atatggaact agtgaagctt gatgacccta aatacctcca attttttcac 420
 47 tttgaattcc tacgagcgcc ttcaattggt gagaaaattg ttcaaacata ttttattata 480
 49 gatttgagga ccataaatta tatcaaacia tctgttatgg aagaatgtaa agaattttgc 540
 51 tcttcattcg aagttgcac agcaatgact tggatagcaa ggacaagagc ttttcaaatt 600
 53 ccagaaagtg agtacgtgaa aattctcttc ggaatggaca tgaggaactc atttaatccc 660
 55 cctcttccaa gcggatacta tggtaactcc attggtaccg catgtgcagt ggataatggt 720
 57 caagacctct taagtggatc tcttttgcgt gctataatga ttataaagaa atcaaaggtc 780
 59 tctttaaatg ataatttcaa gtcaagagct gtggtgaagc catctgaatt ggatgtgaat 840
 61 atgaatcatg aaaacgtagt tgcatttgct gattggagcc gattgggatt tgatgaagtg 900
 63 gattttggct gggggaaacc 920

66 <210> SEQ ID NO: 2

67 <211> LENGTH: 306

68 <212> TYPE: PRT

69 <213> ORGANISM: Taxus cuspidata

71 <400> SEQUENCE: 2

73 Met Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg Leu Arg Glu Thr Glu

P.b

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74 1           5           10           15
77 Asn Gly Asp Leu Glu Val Glu Cys Thr Gly Glu Gly Ala Met Phe Leu
78           20           25           30
81 Glu Ala Met Ala Asp Asn Glu Leu Ser Val Leu Gly Asp Phe Asp Asp
82           35           40           45
85 Ser Asn Pro Ser Phe Gln Gln Leu Leu Phe Ser Leu Pro Leu Asp Thr
86           50           55           60
89 Asn Phe Lys Asp Leu Ser Leu Leu Val Val Gln Val Thr Arg Phe Thr
90 65           70           75           80
93 Cys Gly Gly Phe Val Val Gly Val Ser Phe His His Gly Val Cys Asp
94           85           90           95
97 Gly Arg Gly Ala Ala Gln Phe Leu Lys Gly Leu Ala Glu Met Ala Arg
98           100          105          110
101 Gly Glu Val Lys Leu Ser Leu Glu Pro Ile Trp Asn Met Glu Leu Val
102           115          120          125
105 Lys Leu Asp Asp Pro Lys Tyr Leu Gln Phe Phe His Phe Glu Phe Leu
106           130          135          140
109 Arg Ala Pro Ser Ile Val Glu Lys Ile Val Gln Thr Tyr Phe Ile Ile
110 145          150          155          160
113 Asp Leu Glu Thr Ile Asn Tyr Ile Lys Gln Ser Val Met Glu Glu Cys
114           165          170          175
117 Lys Glu Phe Cys Ser Ser Phe Glu Val Ala Ser Ala Met Thr Trp Ile
118           180          185          190
121 Ala Arg Thr Arg Ala Phe Gln Ile Pro Glu Ser Glu Tyr Val Lys Ile
122           195          200          205
125 Leu Phe Gly Met Asp Met Arg Asn Ser Phe Asn Pro Pro Leu Pro Ser
126           210          215          220
129 Gly Tyr Tyr Gly Asn Ser Ile Gly Thr Ala Cys Ala Val Asp Asn Val
130 225          230          235          240
133 Gln Asp Leu Leu Ser Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys
134           245          250          255
137 Lys Ser Lys Val Ser Leu Asn Asp Asn Phe Lys Ser Arg Ala Val Val
138           260          265          270
141 Lys Pro Ser Glu Leu Asp Val Asn Met Asn His Glu Asn Val Val Ala
142           275          280          285
145 Phe Ala Asp Trp Ser Arg Leu Gly Phe Asp Glu Val Asp Phe Gly Trp
146           290          295          300
149 Gly Lys
150 305
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155 <212> TYPE: DNA
156 <213> ORGANISM: Taxus cuspidata
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161 gaagtggagt gcacagggga gggcgccgtc tttgtggaag ccatggcgga caacgacctt      120
163 tcagtattac aagatttcaa tgagtaacgat ccattcattc agcagctagt tttttatctt      180
165 ccagaggatg tcaatattga ggacctccat cttctaactg ttcaggtaac tcgtttttaca      240
167 tgtgggggat ttgttggtgg cacaagattc caccatagtg tgtctgatgg aaaaggaatc      300

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169 ggccagttac ttaaaggcat gggagaaatg gcaagggggg agtttaagcc ctccttagaa 360
171 ccaatatgga atagagaaat ggtgaagcct gaagacatta tgtacctcca gtttgatcac 420
173 tttgatttca tacaccacc tcttaattctt gagaagtcta ttcaagcatc tatggtaata 480
175 agcttggaga gaataaatta tatcaaacga tgcattgatg aagaatgcaa agaatttttt 540
177 tctgcatttg aagttgtagt agcattgatt tggctagcaa ggacaaagtc ttttcgaatt 600
179 ccacccaatg agtatgtgaa aattatcttt ccaatcgaca tgaggaattc atttgactcc 660
181 cctcttccaa agggatacta tggtaatgct attggtaatg catgtgcaat ggataatgtc 720
183 aaagacctct taaatggatc tcttttatat gctctaattc ttataaagaa atcaaagttt 780
185 gctttaaatg agaatttcaa atcaagaatc ttgacaaaac catctgcatt agatgcgaat 840
187 atgaagcatg aaaatgtagt cggatgtggc gattggagga atttgggatt ttatgaagca 900
189 gatttcggct ggggcaaacc                                     920
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193 <211> LENGTH: 306
194 <212> TYPE: PRT
195 <213> ORGANISM: Taxus cuspidata
197 <400> SEQUENCE: 4
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200 1 5 10 15
203 Asn Gly Glu Leu Glu Val Glu Cys Thr Gly Glu Gly Ala Val Phe Val
204 20 25 30
207 Glu Ala Met Ala Asp Asn Asp Leu Ser Val Leu Gln Asp Phe Asn Glu
208 35 40 45
211 Tyr Asp Pro Ser Phe Gln Gln Leu Val Phe Tyr Leu Pro Glu Asp Val
212 50 55 60
215 Asn Ile Glu Asp Leu His Leu Leu Thr Val Gln Val Thr Arg Phe Thr
216 65 70 75 80
219 Cys Gly Gly Phe Val Val Gly Thr Arg Phe His His Ser Val Ser Asp
220 85 90 95
223 Gly Lys Gly Ile Gly Gln Leu Leu Lys Gly Met Gly Glu Met Ala Arg
224 100 105 110
227 Gly Glu Phe Lys Pro Ser Leu Glu Pro Ile Trp Asn Arg Glu Met Val
228 115 120 125
231 Lys Pro Glu Asp Ile Met Tyr Leu Gln Phe Asp His Phe Asp Phe Ile
232 130 135 140
235 His Pro Pro Leu Asn Leu Glu Lys Ser Ile Gln Ala Ser Met Val Ile
236 145 150 155 160
239 Ser Leu Glu Arg Ile Asn Tyr Ile Lys Arg Cys Met Met Glu Glu Cys
240 165 170 175
243 Lys Glu Phe Phe Ser Ala Phe Glu Val Val Val Ala Leu Ile Trp Leu
244 180 185 190
247 Ala Arg Thr Lys Ser Phe Arg Ile Pro Pro Asn Glu Tyr Val Lys Ile
248 195 200 205
251 Ile Phe Pro Ile Asp Met Arg Asn Ser Phe Asp Ser Pro Leu Pro Lys
252 210 215 220
255 Gly Tyr Tyr Gly Asn Ala Ile Gly Asn Ala Cys Ala Met Asp Asn Val
256 225 230 235 240
259 Lys Asp Leu Leu Asn Gly Ser Leu Leu Tyr Ala Leu Met Leu Ile Lys
260 245 250 255
263 Lys Ser Lys Phe Ala Leu Asn Glu Asn Phe Lys Ser Arg Ile Leu Thr

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264          260          265          270
267 Lys Pro Ser Ala Leu Asp Ala Asn Met Lys His Glu Asn Val Val Gly
268          275          280          285
271 Cys Gly Asp Trp Arg Asn Leu Gly Phe Tyr Glu Ala Asp Phe Gly Trp
272          290          295          300
275 Gly Lys
276 305
279 <210> SEQ ID NO: 5
280 <211> LENGTH: 903
281 <212> TYPE: DNA
282 <213> ORGANISM: Taxus cuspidata
284 <400> SEQUENCE: 5
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287 acagggcagg gtgttctgtt tctggaagcc atggccgaca gcgaccttc agtcttaaca      120
289 gatctggatg actacaagcc atcgtttcag cagttgattt tttctctacc acaggataca      180
291 gatattgagg atctccatct cttgattgtt caggtaactc gttttacatg tgggggtttt      240
293 gttgtgggag cgaatgtgta tagtagtgta tgtgatgcaa aaggatttgg ccaatttctt      300
295 caaggtatgg cagagatggc gagaggagag gttaagccct cgattgaacc gatatggaat      360
297 agagaactgg tgaagccaga acattgtatg cccttccgga tgagtcattc tcaaattata      420
299 cagcacctc tgatcgagga gaaatttgtt caaacatctc ttgttataaa ctttgagata      480
301 ataaatcata tcagacaacg gatcatggaa gaatgtaaag aaagtttctc ttcatttgaa      540
303 attgtagcag cattggtttg gctagcaaag ataaaggctt ttcaaattcc acatagttag      600
305 aatgtgaagc ttctttttgc aatggactta aggagatcat ttaatcccc tcttccacat      660
307 ggatactatg gcaatgcctt cggtattgca tgtgcaatgg ataatgtcca tgacctttta      720
309 agtggatctc ttttgcgcgc tataatgac ataaagaaat caaagttctc tttacacaaa      780
311 gaactcaact caaaaaccgt gatgagcccg tctgtagtag atgtcaatac gaagttcgaa      840
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315 ggc      903
318 <210> SEQ ID NO: 6
319 <211> LENGTH: 301
320 <212> TYPE: PRT
321 <213> ORGANISM: Taxus cuspidata
323 <400> SEQUENCE: 6
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329 Glu Val Glu Cys Thr Gly Gln Gly Val Leu Phe Leu Glu Ala Met Ala
330          20          25          30
333 Asp Ser Asp Leu Ser Val Leu Thr Asp Leu Asp Asp Tyr Lys Pro Ser
334          35          40          45
337 Phe Gln Gln Leu Ile Phe Ser Leu Pro Gln Asp Thr Asp Ile Glu Asp
338          50          55          60
341 Leu His Leu Leu Ile Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
342 65          70          75          80
345 Val Val Gly Ala Asn Val Tyr Ser Ser Val Cys Asp Ala Lys Gly Phe
346          85          90          95
349 Gly Gln Phe Leu Gln Gly Met Ala Glu Met Ala Arg Gly Glu Val Lys
350          100          105          110
353 Pro Ser Ile Glu Pro Ile Trp Asn Arg Glu Leu Val Lys Pro Glu His
354          115          120          125

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357 Cys Met Pro Phe Arg Met Ser His Leu Gln Ile Ile His Ala Pro Leu
358      130                      135                      140
361 Ile Glu Glu Lys Phe Val Gln Thr Ser Leu Val Ile Asn Phe Glu Ile
362 145                      150                      155                      160
365 Ile Asn His Ile Arg Gln Arg Ile Met Glu Glu Cys Lys Glu Ser Phe
366                      165                      170                      175
369 Ser Ser Phe Glu Ile Val Ala Ala Leu Val Trp Leu Ala Lys Ile Lys
370                      180                      185                      190
373 Ala Phe Gln Ile Pro His Ser Glu Asn Val Lys Leu Leu Phe Ala Met
374                      195                      200                      205
377 Asp Leu Arg Arg Ser Phe Asn Pro Pro Leu Pro His Gly Tyr Tyr Gly
378      210                      215                      220
381 Asn Ala Phe Gly Ile Ala Cys Ala Met Asp Asn Val His Asp Leu Leu
382 225                      230                      235                      240
385 Ser Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys Lys Ser Lys Phe
386                      245                      250                      255
389 Ser Leu His Lys Glu Leu Asn Ser Lys Thr Val Met Ser Pro Ser Val
390                      260                      265                      270
393 Val Asp Val Asn Thr Lys Phe Glu Asp Val Val Ser Ile Ser Asp Trp
394                      275                      280                      285
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398      290                      295                      300
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402 <211> LENGTH: 908
403 <212> TYPE: DNA
404 <213> ORGANISM: Taxus cuspidata
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413 gatattgagg acctccatct cttgattgtt caggtgactc actttacatg tggggatttt      240
415 gttgtgggag cgaatgttta tggtagtgta tgtgacggaa aaggatttgg ccagtttctt      300
417 caaggtatgg cggagatggc gagaggagag gttaagccct cgattgaacc gatatggaat      360
419 agagaactgg tgaagccaga agatttaatg gccctccacg tggatcatct tcgaattata      420
421 cacacacctc taatcgagga gaaatttggt caaacatctc ttgttataaa ctttgagata      480
423 ataaatcata tcagacgatg catcatggaa gaatgtaaag aaagtttctc ttcattcgaa      540
425 attgtagcag cattggtttg gctagcaaag ataaaagctt ttcgaattcc acatagttag      600
427 aatgtgaaga ttctctttgc aatggacgtg aggagatcat ttaagccccc tcttccaaag      660
429 ggatactatg gcaatgccta tggatttgca tgtgcaatgg ataatgtcca ggatcttcta      720
431 agtggatctc ttttgcatgc tataatgatc ataaagaaat caaagtcttc tttacacaaa      780
433 aaaatcaact caaaaactgt gatgagcccg tctccattag acgtcaatat gaagtttgaa      840
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437 ggtaaacc
440 <210> SEQ ID NO: 8
441 <211> LENGTH: 302
442 <212> TYPE: PRT
443 <213> ORGANISM: Taxus cuspidata
445 <400> SEQUENCE: 8
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RAW SEQUENCE LISTING ERROR SUMMARY
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

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Seq#:34; N Pos. 3,6,9,18
Seq#:35; N Pos. 9,12,18
Seq#:36; N Pos. 9,15,18
Seq#:37; N Pos. 9,12,15,18
Seq#:38; N Pos. 9,15
Seq#:48; Xaa Pos. 2,3,4